



CLIMAT AND CLIMAT TEMP DATA COLLECTION AT NCDC

By: William Angel



OUTLINE

1. General Education

2. Current Status

3. Problems and Issues

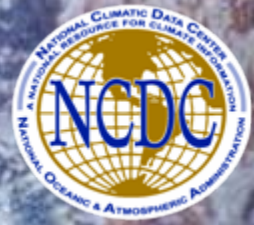
4. Future of MCDW

5. Questions ?



GENERAL EDUCATION

- What is MCDW?
 - means Monthly Climatic Data for the World
 - sponsored by the WMO
 - monthly publication produced by NCDC
 - Staff: William Angel and Joe Kraft
 - contains Summary of the Month values, monthly means, and departures (sfc) for selected surface and upper air stations worldwide
 - contains a station list for recent data



GENERAL EDUCATION

– Surface elements reported

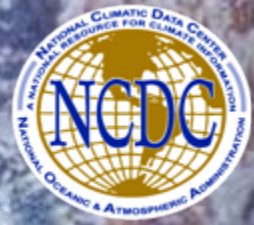
- Mean Station and Sea-level Pressure
- Mean Temperature and Departure from Normal
- Mean Vapor Pressure and Departure from Normal
- Days of Precipitation Greater than 1mm
- Total Precipitation and Departure from Normal
- Precipitation Quintile
- Total Hours of Sunshine and Percent of Normal



GENERAL EDUCATION

– Upper Air elements reported

- 10 standard pressure levels
 - SFC, 850, 700, 500, 300, 200, 150, 100, 50, 30 mb
- Height
- Number of Missing Days for Temperature
- Mean Temperature
- Dew Point Depression
- Number of Missing Days for Wind
- Steadiness Factor (%)
- Wind Direction
- Wind Speed



GENERAL EDUCATION

- Data Sources
 - NOAAPort
 - UK Met Office
 - Email
 - mcdw.ncdc@noaa.gov
 - Postal
 - Fax
- All data is Quality Controlled and Assured!



GENERAL EDUCATION

- MCDW system uses stations denoted in the WMO Pub 9, Vol. A Handbook as CLIMAT and/or CLIMAT TEMP
 - Published Surface Stations: ~2000
 - Published Upper Air Stations: ~350
- NCDC Archive
 - TD3500: MCDW – Surface and Upper Air
 - Updated annually
 - Data begins in 1986
 - NCAR updates
 - TD9645: World Weather Records – NCAR Surface
 - Updated annually
 - Data begins for a few stations in 1731!





VOL. 59 NO. 5



ISSN 0027-0296

MAY 2006

MONTHLY

CLIMATIC

DATA

FOR THE WORLD

PREPARED IN COOPERATION WITH THE

WORLD METEOROLOGICAL ORGANIZATION

"I certify that this is an official publication of the National Oceanic and Atmospheric Administration and is compiled from information received at the National Climatic Data Center, Asheville, North Carolina 28801."

A handwritten signature in black ink, reading "Thomas R. Karl".

Director
National Climatic Data Center



SURFACE

MAY 2006

STATION	LATITUDE	LONGITUDE	ELEVATION	DAYS OBS.	PRESSURE		TEMPERATURE		VAPOR PRESSURE		PRECIPITATION				SUNSHINE	
					MEAN STATION	MEAN SEA LEVEL	MEAN	DEPART	MEAN	DEPART	DAYS 1 MM	TOTAL	DEPART	QUINTILE	TOTAL	% of AV.
EUROPE																
NORWAY																
01001 JAN MAYEN	7056N	00840W	10		1015.4	1016.6	.8	1.5	5.5	.4	10	55	15	4	256	117
01008 SVALBARD LUFTHAVN	7815N	01528E	29		1013.5	1016.8	.9	5.3	4.6	1.0	2	4	-3	2		
01025 TROMSO/LANGNES	6941N	01855E	10		1012.9	1014.0	7.0	1.9	6.6	.5	7	27	-19	2		
01026 TROMSO	6939N	01856E	115		999.7	1013.7	7.4		6.5		8	35		3		
01028 BJORNOYA	7431N	01901E	16		1014.6	1016.6	1.8	3.2	5.7	.6	2	6	-12	1		
01098 VARDØ	7022N	03106E	15		1014.4	1015.7	4.7	2.2	6.4	.2	4	18	-12	2		
01152 BODØ VI	6716N	01422E	13		1011.6	1013.2	8.8	1.6	7.4	.2	6	21	-25	2		
01212 ONA II	6252N	00632E	15		1011.4	1013.0	9.0		8.4		9	34		2		
01238 FOKSTUA II	6207N	00917E	974		900.1	1013.2	3.4		5.3		7	37		5		
01241 ORLAND III	6342N	00936E	7		1011.8	1012.9	9.8	1.1	8.0	-.5	7	58	8	4		
01317 BERGEN/FLORIDA	6023N	00520E	36		1007.6	1011.9	11.2	.7	8.1	-.7	13	70	-36	2		
01384 OSLO/GARDERMOEN	6012N	01105E	204		987.8	1012.3	10.1	.7	7.7	.2	12	96	35	5		
01403 UTSIRA FYR	5918N	00453E	56		1005.4	1012.1	9.7		8.8		11	57		3		
01415 STAVANGER/SOLA	5853N	00538E	9		1011.1	1012.2	10.8	.9	8.4	-.7	11	46	-22	2		
01465 TORUNGEN FYR	5824N	00848E	15		1011.2	1012.6	10.5		9.6		10	66		4		
SWEDEN																
02080 KARESUANDO	6827N	02227E	331		973.8	1013.8	5.8	2.4	6.5	.6	8	43	15	5	277	103
02120 KVIKKJOKK-ARRENJARKA	6653N	01801E	320		975.3	1013.4	6.1		6.6		11	75		5		
02128 GUNNARN	6500N	01742E	283		979.4	1013.5	7.8	.8	7.4	1.0	14	60	21	5		
02196 HAPARANDA	6550N	02409E	6		1012.4	1013.1	7.6	1.5	7.4	.7	10	41	9	4		
02226 ØSTERSUND FROSON	6312N	01430E	376		967.9	1012.5	8.1	.9	7.1	.4	7	66	31	5		
02288 HOLMOGADD	6336N	02045E	6		1011.9	1012.8	6.6		8.2		9	32		3		
02366 TIMRA/MIDLANDA	6231N	01727E	8		1012.4	1013.0	8.1	.3	8.4	1.2	12	44	6	4		
02410 MALUNG	6041N	01342E	308		976.4	1013.3	8.4		7.8		14	58		4		
02418 KARLSTAD FLYGPLATS	5927N	01320E	107		999.4	1012.3	11.2	1.3	8.4	-.1	12	98	56	5		
02485 STOCKHOLM	5921N	01804E	52		1006.6	1012.9	11.4	.7	8.5	.0	8	42	12	4		
02512 GÖTEBORG/SAVE	5747N	01153E	20		1010.8	1013.0	11.4	.5	10.7	1.4	11	63	12	4		
02550 JONKÖPING/AXAMO	5745N	01405E	224		985.8	1012.9	9.7	.1	8.5	.4	11	55	9	4		
02584 GÖTSCHE SANDON	5824N	01912E	12		1012.1	1013.5	8.8		9.0		3	7		1		
02590 VISBY	5740N	01821E	51		1007.1	1013.2	10.5	.9	9.0	.1	9	41	12	4		
FINLAND																
02801 KILPISJARVI	6903N	02047E	478		955.5	1014.9	3.9		5.9		10	35		5	240	115
02805 KEVO	6945N	02702E	107		1002.4	1015.0	5.6		6.0		3	25		4		
02836 SODANKYLÄ	6722N	02639E	179		991.3	1013.8	6.5	1.5	6.2		7	24	-11	2		
02869 KUUSAMO	6558N	02911E	263		980.7	1013.8	6.4	1.4	6.8		12	77	33	5		
02875 OULU	6456N	02522E	15		1011.7	1013.6	9.0	1.5	7.4		10	83	53	5		

LEVEL		TEMPERATURE			VECTOR WIND			LEVEL	TEMPERATURE			VECTOR WIND			LEVEL	TEMPERATURE			VECTOR WIND							
PRESSURE	HEIGHT	MISSING DAYS	MEAN	DEW POINT DEPRESSION	MISSING DAYS	STEADINESS	DIRECTION	SPEED	PRESSURE	HEIGHT	MISSING DAYS	MEAN	DEW POINT DEPRESSION	MISSING DAYS	STEADINESS	DIRECTION	SPEED	PRESSURE	HEIGHT	MISSING DAYS	MEAN	DEW POINT DEPRESSION	MISSING DAYS	STEADINESS	DIRECTION	SPEED
hPa	gpm		°C	°C		%	o	mps	hPa	gpm		°C	°C		%	o	mps	hPa	gpm		°C	°C		%	o	mps
EUROPE - NORWAY JAN MAYEN 01001 MAY 2006 7056N 00840W OB 3									EUROPE - NORWAY BJORNOYA 01028 MAY 2006 7431N 01901E OB 3									EUROPE - NORWAY BODO 01152 MAY 2006 6717N 01427E OB 3								
030	23987	0	-49.1	33.9	1	22	72	2	030	23967	1	-48.8	33.9	1	38	44	3	030	23957	0	-50.7	33.4	0	26	341	2
050	20646	0	-49.5	33.9	0	12	130	1	050	20620	0	-49.7	33.6	0	40	343	3	050	20635	0	-51.4	33.2	0	48	309	3
100	16110	0	-49.0	34.1	0	19	252	2	100	16084	0	-49.0	33.8	0	56	304	4	100	16124	0	-50.0	33.6	0	54	268	4
150	13443	0	-47.1	34.7	0	20	253	2	150	13418	0	-47.8	34.1	0	60	293	5	150	13464	0	-48.1	34.1	0	54	260	4
200	11536	0	-46.9	33.9	0	25	246	3	200	11517	0	-47.8	32.9	0	65	282	6	200	11573	0	-49.8	29.8	0	62	258	6
300	8885	0	-51.4	12.0	0	23	218	4	300	8876	0	-52.0	11.2	0	57	276	9	300	8951	0	-52.4	9.5	0	48	249	6
500	5415	0	-28.2	10.2	0	23	196	3	500	5411	0	-28.7	10.5	0	49	282	6	500	5467	0	-26.6	11.3	0	50	248	5
700	2922	0	-12.7	8.7	0	11	205	1	700	2924	0	-13.1	10.6	0	36	285	3	700	2952	0	-9.8	10.1	0	41	244	3
850	1419	0	-5.8	5.8	0	8	138	1	850	1424	0	-6.0	6.2	0	16	300	2	850	1428	0	-7	5.5	0	40	234	3
1016	* 9		.8	2.5					1014	* 18		1.8	3.4					1009	* 33		8.7	6.7				
EUROPE - NORWAY ORLAND III 01241 MAY 2006 6342N 00936E OB 3									EUROPE - NORWAY STAVANGER/SOLA 01415 MAY 2006 5852N 00540E OB 3									EUROPE - SWEDEN TIMRA/MIDLANDA 02365 MAY 2006 6231N 01727E OB 3								
030	23977	2	-51.2	32.8	2	9	21	1	030	23963	0	-51.7	33.3	0	16	292	1	030	24042	28	-50.1	33.1	9	88	89	4
050	20647	1	-51.6	32.8	1	41	260	2	050	20663	0	-52.3	33.2	0	25	216	2	050	20647	14	-51.9	32.8	9	49	288	3
100	16142	1	-50.2	33.2	1	55	247	4	100	16176	0	-51.4	33.5	0	56	245	5	100	16161	0	-50.7	33.3	0	52	263	4
150	13484	1	-48.1	33.7	1	64	252	6	150	13531	0	-49.1	34.1	0	59	247	7	150	13505	0	-48.9	33.7	0	61	261	5
200	11592	1	-49.5	29.2	1	66	248	7	200	11644	0	-50.3	29.1	0	60	252	9	200	11618	0	-50.4	28.5	0	61	271	6
300	8962	1	-51.8	10.1	1	56	218	8	300	9009	0	-49.7	12.4	0	54	250	11	300	8990	0	-51.4	10.3	0	37	275	5
500	5484	0	-26.1	11.7	0	59	212	6	500	5498	0	-25.0	13.1	0	51	227	7	500	5495	0	-25.9	10.9	0	31	284	3
700	2962	0	-8.7	12.3	0	47	219	4	700	2967	0	-8.2	11.8	0	52	214	5	700	2959	0	-8.5	10.0	1	18	262	2
850	1432	0	.4	6.8	0	34	232	3	850	1433	0	1.2	5.3	0	46	177	5	850	1428	0	.7	5.0	1	10	265	1
1012	* 10		9.8	6.5					1008	* 37		10.8	5.9					1013	* 8		7.5	5.7				
EUROPE - FINLAND JYVASKYLA 02935 MAY 2006 6224N 02541E OB 3									EUROPE - FINLAND JOKIOINEN 02963 MAY 2006 6049N 02330E OB 3									EUROPE - UNITED KINGDOM LERWICK 03005 MAY 2006 6008N 00111W OB 3								
030	23960	17	-51.3	32.5	9	22	7	1	030	23968	7	-52.0	33.2	7	28	37	2	030	23962	1	-51.1	33.1	1	24	171	2
050	20658	0	-52.1	32.3	0	41	310	2	050	20652	0	-52.7	32.9	0	49	282	3	050	20651	0	-51.6	32.6	0	38	228	3
100	16161	0	-50.6	32.9	0	49	281	4	100	16164	0	-51.0	33.4	1	57	258	5	100	16156	0	-50.8	32.7	0	55	244	5
150	13507	0	-48.7	33.5	0	59	272	5	150	13515	0	-49.1	33.9	1	63	259	6	150	13501	0	-48.6	33.0	0	54	243	6
200	11618	0	-49.7	29.4	0	48	277	5	200	11635	0	-50.5	28.5	1	51	270	6	200	11607	0	-48.8	29.8	0	56	244	9
300	8987	0	-50.9	10.8	0	36	278	6	300	9006	0	-50.1	13.0	1	44	264	7	300	8963	0	-49.5	13.3	0	56	239	11
500	5491	0	-26.0	11.5	0	31	272	4	500	5504	0	-25.6	12.3	1	32	261	4	500	5458	0	-25.9	10.9	0	49	224	7
700	2969	0	-9.1	8.9	0	33	245	3	700	2977	0	-8.5	9.7	0	38	235	3	700	2939	0	-9.2	11.7	0	44	211	5
850	1440	0	.9	5.2	0	29	224	2	850	1445	0	1.2	4.9	0	38	220	3	850	1412	0	-.5	4.4	0	30	183	3
996	* 145		10.4	8.6					1001	* 104		10.1	6.9					1001	* 84		7.6	3.6				

STATION LIST RECENT DATA

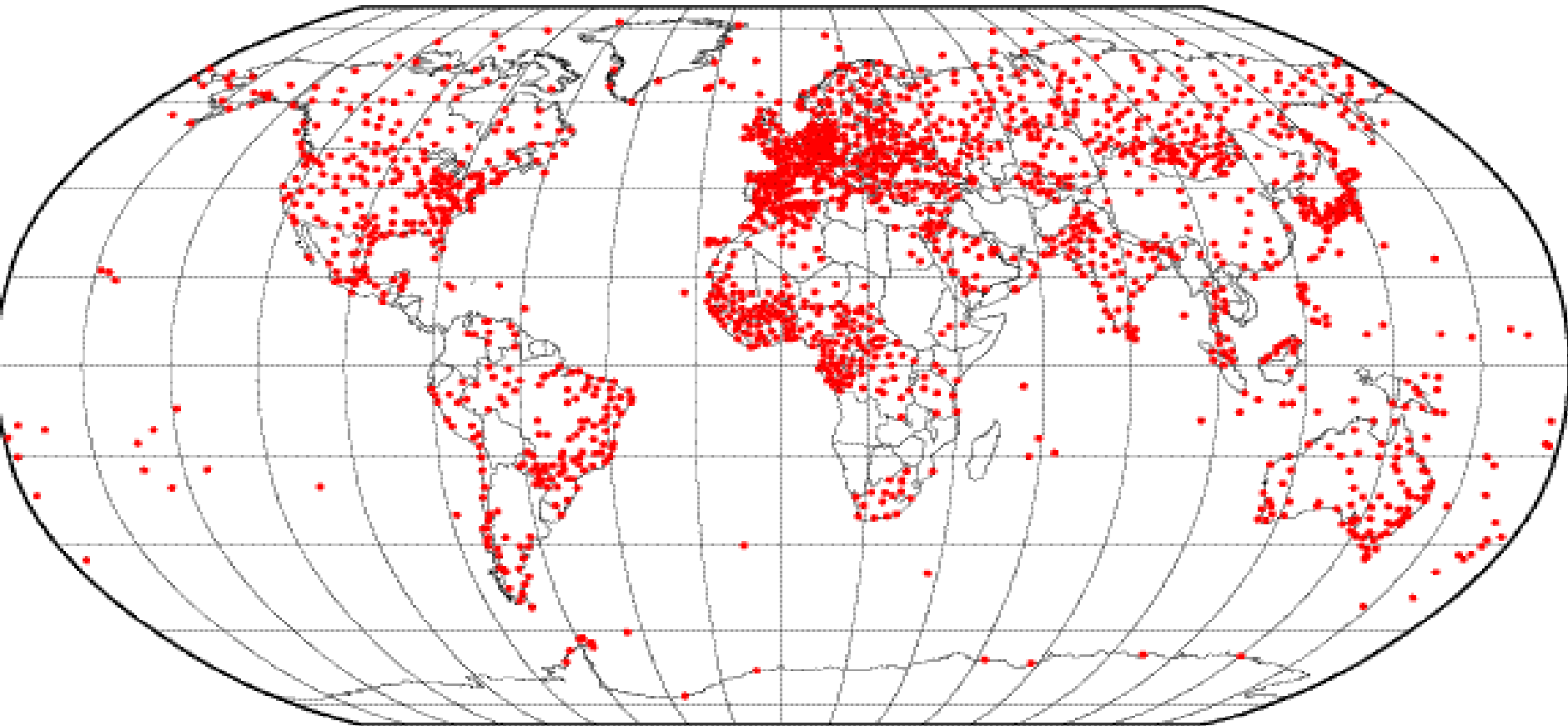
06030	C	AALBORG	DENMARK AND FAROE I	47575	C	AOMORI	JAPAN
04220	CT	AASIAAT (EGEDESMINDE)	GREENLAND	80084	C	APARTADO/LOS CEDROS	COLOMBIA
47409	C	ABASHIRI	JAPAN	48462	C	ARANYAPRATHET	THAILAND
07005	C	ABBEVILLE	FRANCE	84752	C	AREQUIPA	PERU
03502	C	ABERPORTH	U KINGDOM	22550	CT	ARHANGEL'SK	RUSSIAN FEDERATION
41112	C	ABHA	SAUDI ARABIA	85406	C	ARICA	CHILE
65578	C	ABIDJAN	COTE D'IVOIRE	10091	C	ARKONA	GERMANY
41217	CT	ABU DHABI INTER. AIRPORT	U ARAB EMIRATES	62772	C	AROMA	SUDAN
76805	C	ACAPULCO, GRO.	MEXICO	10460	C	ARTERN	GERMANY
63450	CT	ADDIS ABABA-BOLE	ETHIOPIA	44288	C	ARVAIHEER	MONGOLIA
94672	CT	ADELAIDE AIRPORT	AUSTRALIA	60452	C	ARZEW	ALGERIA
65585	C	ADIAKE	COTE D'IVOIRE	47407	C	ASAHIKAWA	JAPAN
60620	C	ADRAR	ALGERIA	72315	C	ASHEVILLE/MUN., NC.	USA
76644	CT	AEROP.INTERNACIONAL MERIDA,	MEXICO	62414	CT	ASSWAN	EGYPT
17190	C	AFYON	TURKEY	86218	C	ASUNCION/AEROPUERTO	PARAGUAY
61024	C	AGADEZ	NIGER	61421	C	ATAR	MAURITANIA
42647	CT	AHMADABAD	INDIA	62680	C	ATBARA	SUDAN
47602	C	AIKAWA	JAPAN	17607	T	ATHALASSA	CYPRUS
60415	C	AIN-BESSAM	ALGERIA	72219	C	ATLANTA/MUN., GA.	USA
61499	C	AIOUN EL ATROUSS	MAURITANIA	91925	CT	ATUONA	FRENCH POLY.
07761	CT	AJACCIO	FRANCE	35700	C	ATYRAU	KAZAKHSTAN
47582	CT	AKITA	JAPAN	10852	C	AUGSBURG	GERMANY
42933	C	AKOLA	INDIA	72254	C	AUSTIN/CTY, TX.	USA
72521	C	AKRON/AKRON-CANTON REG. OH.	USA	31168	CT	AYAN	RUSSIAN FEDERATION
04063	C	AKUREYRI	ICELAND	08330	C	BADAJOS/TALAVERA LA REAL	SPAIN
40420	C	AL-AHSA	SAUDI ARABIA	30554	CT	BAGDARIN	RUSSIAN FEDERATION
08280	C	ALBACETE/LOS LLANOS	SPAIN	87750	C	BAHIA BLANCA AERO	ARGENTINA
31004	CT	ALDAN	RUSSIAN FEDERATION	44265	C	BAITAG	MONGOLIA
07139	C	ALENCON	FRANCE	23891	C	BAJKIT	RUSSIAN FEDERATION
60369	C	ALGER-PORT	ALGERIA	71926	T	BAKER LAKE UA, NU	CANADA
08359	C	ALICANTE	SPAIN	07299	C	BALE-MULHOUSE	FRANCE
42475	C	ALLAHABAD/BAMHRAULI	INDIA	43295	C	BANGALORE	INDIA
08487	C	ALMERIA/AEROPUERTO	SPAIN	29612	C	BARABINSK	RUSSIAN FEDERATION
44277	C	ALTAI	MONGOLIA	07790	C	BASTIA	FRANCE
97724	C	AMBON/PATTIMURA	INDONESIA	37484	C	BATUMI	GEORGIA
42071	C	AMRITSAR	INDIA	91557	C	BAUERFIELD (EFATE)	VANUATU
25563	C	ANADYR'	RUSSIAN FEDERATION	44275	C	BAYANBULAG	MONGOLIA
70273	CT	ANCHORAGE/INT., AK	USA	60571	CT	BECHAR	ALGERIA
91568	C	ANEITYUM	VANUATU	54511	CT	BEIJING	CHINA
10291	C	ANGERMUENDE	GERMANY	60401	C	BEJAIA-PORT	ALGERIA
17130	CT	ANKARA/CENTRAL	TURKEY	82191	C	BELEM	BRAZIL
60360	C	ANNABA	ALGERIA	60518	C	BENI-SAF	ALGERIA
17300	C	ANTALYA	TURKEY	13275	T	BEOGRAD/KOSUTNJAK	SERBIA AND MONTENEG
40718	C	ANZALI	IRAN, ISLAMIC REP	10384	C	BERLIN-TEMPELHOF	GERMANY

CURRENT STATUS

- Operations
 - Real-time monitoring
 - Produce daily map of surface stations
 - Data is transferred to NCDC's Climate Monitoring Branch for the GHCN update
 - Monthly
 - Produce publication
 - Highlight GCOS stations
 - Create archive
 - Replace file for GHCN update
 - GCOS reports are generated by Larry Griffin (NCDC)
 - Available on ftp and sent to Richard Thigpen



1815 CLIMAT Stns Rcvd at NCDC



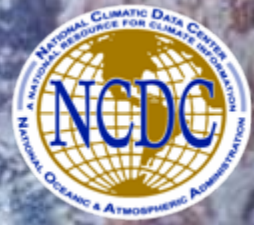
PROBLEMS AND ISSUES

- Vol. A updates
 - Program participation (pub or non-pub)
 - Current MCDW station database uses all stations reported in Vol. A
- Lack of data from Published stations
 - Vol. A Number of stations vs. last 5 months
 - SFC: 2950 vs. ~2000 received (950 msg or 33%)
 - UPA: 560 vs. ~340 received (220 msg or 40%)
 - Review handouts
- POR for station normals not known



FUTURE OF MCDW

- Expand the Publication
- Overhaul the current MCDW processing system
- Expand the Archive
- Other items
 - Reports
 - WMO
 - Regional Centers
 - Misc items
 - ?



QUESTIONS ?

- Questions?
- Comments?
- Thanks!!!

